

Amendments to the Claims:

Claims 1 - 14 are pending with claims 1 - 4 and 6 - 8 having been amended and claims 9 - 14 having been added. This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1. (Currently Amended) A CMOS pixel for use in a CMOS imager, comprising:
 - a. a photodiode having a substantially square-shaped image sensing area, an anode coupled to ground and a cathode;
 - b. a transfer transistor having a drain coupled to the cathode of the photodiode, a gate controlled by a control signal, Tx, and a source coupled to a floating sensing node;
 - c. a reset transistor having a drain coupled to a reset potential, a gate controlled by a control signal, Rx, and a source coupled to the floating sensing node; and
 - d. a source follower coupled between the floating sensing node and an output of the ~~unit~~ CMOS pixel, the source follower controlled by a select signal.
2. (Currently Amended) The CMOS pixel of claim 1, wherein the ~~source~~ transfer transistor, the reset transistor, and the source follower are positioned along at least two sides of the image sensing area.
3. (Currently Amended) The CMOS pixel of claim 1, further comprising a substantially hemispherically-shaped ~~microlense~~ microlens positioned substantially over the image sensing area.
4. (Currently Amended) An array comprising:
a plurality of CMOS pixels, each CMOS pixel comprising:

a substantially square image sensing region, wherein a distance between the image sensing regions of neighboring pixels is optimized to reduce crosstalk between the neighboring pixels; and
a substantially hemispherical microlens positioned over the image sensing region of each pixel.

5. (Original) The array of pixels of claim 4, wherein the distance is further optimized to improve MTF.

6. (Currently Amended) An improved CMOS imaging array having a plurality of pixels for use in a CMOS imaging system, the improvement of each pixel comprising:

using a substantially square image sensing region within each pixel to reduce
configured to increase the distance between the image sensing regions of neighboring pixels; and
a substantially hemispherical microlens positioned over the image sensing region.

7. (Currently Amended) The CMOS imaging array of claim 6, ~~further comprising: a microlense positioned over the image sensing area of each pixel~~ wherein the position of the substantially hemispherical microlens is configured to increase ~~the~~ an effective fill factor.

8. (Currently Amended) The CMOS imaging array of claim 7, wherein the improvement of each pixel further comprises:

a. a transfer transistor having a drain coupled to the cathode of the photodiode, a gate controlled by a control signal, Tx, and a source coupled to a floating sensing node;

b. a reset transistor having a drain coupled to a reset potential, a gate controlled by a control signal, Rx, and a source coupled to the floating sensing node; and

c. a source follower coupled between the floating sensing node and an output of the ~~unit~~ pixel, the source follower controlled by a select signal.

9. (New) The CMOS imaging array of claim 8, wherein the transfer transistor, the reset transistor, and the source follower are positioned along at least two sides of the pixel.

10. (New) The CMOS imaging array of claim 8, wherein the reset transistor is a depletion mode transistor.

11. (New) The array of claim 1, wherein the reset transistor is a depletion mode transistor.

12. (New) The array of claim 4, wherein the distance is at least 3.8 micrometers along a first axis and 4 micrometers along a second axis.

13. (New) The array of claim 12, wherein the first axis and the second axis are perpendicular.

14. (New) The array of claim 4, wherein sides of each CMOS pixel are about 8 micrometers.